



INSPECTION REPORT: GREENS CREEK MINE

Tongass National Forest Minerals Group
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Date of Inspection: Tuesday July 18, 2017
Date of Report: Friday July 28, 2017
USDA Forest Service Inspector: Richard Dudek

Ranger District: Admiralty National Monument, Juneau Ranger District
Weather Conditions: Cloudy with rain. Temperature: mid 50's (°F).

Exploration in accordance with operating plan	Not Applicable
Timber removal following timber sale contract	Not Applicable
BMP for erosion control	Satisfactory
Water Quality BMP	Satisfactory
Public safety & fire prevention	Satisfactory
Reclamation work adequate and timely	Satisfactory
Roads maintenance adequate and current	Satisfactory
Tails placement in accordance with plan	Satisfactory
Waste Rock placement in compliance	Satisfactory
Company supervision of operation	Satisfactory
Operating in a clean and orderly manner	Satisfactory

Any conditions noted as UNSATISFACTORY will require follow up action by the Mine Inspector and a written memorandum to the operator, outlining the necessary work.

NEW REMARKS

Ward Air provided a Beaver floatplane to/from site.

Mitch Brooks (Environmental Engineer, Hecla Greens Creek Mining Company) accompanied Richard Dudek (Geologist, US Forest Service), Barbara Adams (Fisheries Biologist, US Forest Service), Marci Johnson (Wildlife Biologist, US Forest Service), and Nicole Legere (Habitat Biologist, Alaska Department of Fish and Game (ADF&G)).

The site inspection included the A and B access roads, 920 area, Site 23, Pond D, FWMP site 54, 7.4 mile B-road Bridge, Fish Pass (600 feet south of 5.0 mile B-road), 3.4 mile B-road Bridge, 3.2 mile B-road culvert, 3.1 mile B-road sediment screen, 3.0 mile B-road Bridge, and the TDF area.

ACTION ITEMS

- No new actions items were found during this inspection.

NOTE WORTHY ITEMS

HGCMC is currently conducting surface exploration work at the Gallagher drilling sites (Photo 1). This is part of HGCMC's approved five-year (2017-2021) Surface Exploration Plan of Operations.

HGCMC will be installing a water misting system for fugitive dust control in the TDF area in the fall of 2017.





ACCESS ROADS A /B

Due to the recent rain events, sections along the B-road from 4.0 to 6.0 mile have potholes and wash boarding features. HGCMC Surface operations will be placing road base gravel, and grading the access road system (Appendix 8 Road Operations and Maintenance Plan).

920 AREA

The flow for Greens Creek (Photo 2) at the 920 weir was 69 cubic feet per second (cfs). The daily fresh water withdrawal for the 920 system remains at 1.5 cfs (700 gpm) (Appendix 10; 3.1).

The 920 bridge's splashguards are effectively working by preventing sediment splash over into Greens Creek (Photo 3).

HGCMC has begun construction for the 920 warehouse expansion (Photo 4).

HGCMC civil engineers have completed the structural integrity project for the 920 sewer lift station (Photo 5).

SITE 23

HGCMC recently removed Class 1 waste rock "Argillite" (Photo 6) to the northern eastern outer slopes of the TDF area. Class 1 waste rock is primarily used as a rock armor for the outer slopes to prevent fugitive dust, and serves as an acid neutralizing cover layer for potential acid generating waste rock. (Appendix 1; Section 3.1).

POND D OUTFALL 006/SITE 54

Pond D's (Photo 7) water level was minimal and this site was well kept and in order.

During Bio-monitoring in 2015 and 2016, Coho salmon were observed in Greens Creek at Fresh Water Monitoring Program (FWMP) Site 54. On 7/18/2017, the US Forest Service biologists conducted a fish eDNA test (Photo 8) at site 54 for Coho DNA. The results from the eDNA test will indicate if Coho are present beyond the 5.0 mile B-road natural barrier (fish pass).

7.4-MILE B-ROAD BRIDGE (KILLER CREEK BRIDGE)

HGCMC personnel will be re-decking/relining the bridge in late July, 2017 (Photo 9). The splashguards are effectively working by preventing sediment splash over from vehicle traffic (Photo10). HGCMC Surface operations recently hydroseeded the bridge's downhill side abutment (Photo 11). HGCMC anticipates the vegetative cover will help filter out sediments from surface runoff.

5.0 MILE B-ROAD FISH PASS

The fish passage (Photo 12) was reconstructed on Greens Creek as a mitigation requirement in the 2013 TDF Expansion Final Environmental Impact Statement and Record of Decision. The reconstruction included installing three concrete steel-capped weirs. HGCMC was issued a fish habitat permit (FH11-I-0123) by the Alaska Department of Fish and Game (ADF&G). This permit authorizes HGCMC to maintain the fish pass as long as tailings block fish passage in the Tributary Creek headwaters. While on site, one Dolly Varden char were observed downstream of the fish pass bridge (Photo 13). ADF&G Habitat biologists will continue Bio-monitoring upstream to determine if anadromous fish can transit beyond this natural barrier.





3.4-MILE B-ROAD BRIDGE (FALLS CREEK BRIDGE)

HGCMC Surface operations have scheduled the bridge to re-decked and relined in late July, 2017 (Photo 14). During the re-decking/relining, the temporary sediment barrier (Photo 15) will be cleaned. The temporary sediment barrier meets the same maintenance criteria as silt fencing. When sediment accumulation reaches one-third of the structure's height, the sediments are removed and the structure is cleaned (Appendix 5 BMP plan page BMP-12).

3.2 MILE B-ROAD CULVERT

During the previous inspection on 6/8/2017, turbid water was observed past the culvert's structural BMP's (Photos 16-17). During this inspection, clear water was entering the culvert, and clear water was flowing from the BMP's, then into the vegetation. During and after each rainfall event, HGCMC personnel inspect and conduct any necessary maintenance on culverts and the structural BMP's (Appendix 5 BMP plan page BMP 6-7).

3.1 MILE B-ROAD REMOVABLE SEDIMENT SCREEN

Due to recent rain events and sediment loading, the removable sediment screen is near capacity (Photo 18). HGCMC Surface operations will replace the screen when the sediment accumulation reaches 75 percent.

3.0-MILE B-ROAD BRIDGE (ZINC CREEK BRIDGE)

HGCMC Surface operations will begin re-decking and relining the bridge (Photo 19) in late July, 2017.

White material was observed on the ground and inside the drain for the uphill side abutment (Photo 20). HGCMC conducted an X-ray diffraction (XRD) test on the white material, and the results suggest the composition of the precipitate is quartz (SiO_2) and aluminum (Al).

HGCMC Surface operations have recently hydroseeded the uphill side abutment of the bridge (Photo 21). Hydroseeding is a mitigation used for soil slope stability, which will help reduce erosion damage caused by stormwater runoff (Appendix 5 BMP plan; page 13).

TDF AREA

HGCMC continues to place tailings in the S3P1 area (Photos 22-23).

The construction for Pond 10 (Photo 24) is complete, and the contractors are in the final construction stage for the concrete flow structure (Photo 25). HGCMC is currently engaged in the review process with the Alaska Department of Natural Resources (ADNR) Alaska Dam Safety Program for approval to use Pond 10 and the concrete flow control structure.

The water treatment plant was treating 1187 gallons of water per minute (gpm). The water treatment plant was well kept and in order.

YOUNG BAY

This site was well kept and orderly.

PIT 7

This site is inactive.



SAND PIT (1.4 MILE A-ROAD)

This site is inactive

FOLLOW UP ITEM

TDF AREA

B-road bridges

3.1 Mile B-road sediment screen

920 warehouse

PHOTOS

(Images available upon request)



Photo 1. A support helicopter for surface exploration.



Photo 2. Greens Creek



Photo 3. The 920 bridge.



Photo 4. Excavation has begun for the 920 warehouse expansion.



Photo 5. 920 sewer lift station.



Photo 6. Class 1 waste rock at Site 23.



Photo 7. Pond D (Outfall 006).



Photo 8. An eDNA test at FWMP site 54.



Photo 9. 7.4 mile B-road Bridge (Killer Creek Bridge).



Photo 10. 7.4 mile B-road Bridge splashguards.



Photo 11. 7.4 mile B-road bridge's downhill side abutment was recently hydroseeded.



Photo 12. 5.0 mile B-road Fish Pass.



Photo 13. Downstream image from the Fish pass bridge.



Photo 14. 3.4 mile B-road Bridge (Falls Creek Bridge).



Photo 15. The 3.4 mile B-road temporary sediment barrier (Falls Creek Bridge).



Photo 16. The 3.2 mile B-road culvert.



Photo 17. 3.2 mile B-road rock check dam.



Photo 18. The 3.1 mile B-road removable sediment screen.



Photo 19. 3.0 mile B-road Bridge (Zinc Creek Bridge).



Photo 20. The white precipitate is composed of quartz and aluminum.



Photo 21. Hydroseeded abutment



Photo 22. The S3P1 expansion area (Image 1 of 2).



Photo 23. The S3P1 expansion area (Image 2 of 2).



Photo 24. TDF area Pond 10.



Photo 25. Concrete flow structure.

Thanks to HGCMC for a safe visit.
U.S. Forest Service Officer: /s/ Richard Dudek
